SECOND INTERNATIONAL CONGRESS ON ESSENTIAL FATTY ACIDS AND THEIR ICOSANOIDS

24 - 27th MARCH 1985. LONDON UK

PRELIMINARY PROGRAMME:

1.0 PROGRAMME STYLE:

It is hoped that the meeting will emphasise the link between fatty acids and their icosanoids at the levels of biochemistry and of their relevance to physiology and medicine.

2.0 KEY-NOTE PRESENTATIONS:

The subject is rapidly advancing and there is a need for key-note communications which focus on the current developments. We would therefore want sessions of presentations in subject matters of selected key areas of biochemistry and physiology with their relevance to cardiovascular disease, cancer, cell injury and repair. It is difficult to choose because of the rapid developements. To do justice, we would need a large symposium with simultaneous sessions. However, opinion was against simultaneous sessions and it has been suggested that:

1. LECTURES The presentations should be short (ca 20min.) followed by a discussion of 5-10 min. They should be restricted to new information on top of an introduction which should be a brief update taking the 1980 publication as the most distant staring point! A number of important areas will have to be handled by posters to enable coverage of the subject.

2. FREE COMMUNICATIONS AS POSTERS: The major part of the material would need to be presented as posters which as far as possible, will be in clusters of related topics with provision for discussion groups aroound the posters. The posters will receive the same status as oral communications in conventional meetinmgs; as the focus is on new data, the research material of the posters will be considered for publication as papers.

3.0 PUBLICATION:

Agreement has been reached to publish the proceedings as before, as volume 26 of Progress in Lipid Research. Ralph Holman has agreed to again act as chief editor and the international committee would be expected to act as an editorial board to referee the papers submitted for publication from all sessions.

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4.0 LECTURES

Opening session: - Chairman R.T. Holman.
Arachidonic acid and prostacylin. - Sir John. Vane.

4.1 BIOCHEMISTRY Chairman: J.F.Mead.

4.1.1 Regulation of desaturation and chain elongation - with its influence on the rate of provision of AA, EPA from linoleic acid and alpha-linolenic acids. - H. Sprecher. Ohio, USA.

4.1.2 Competitive effects between saturated, w9, w6 and w3 fatty acids - and other isomeric interactions - R.T. Holman USA.

4.1.3 Essential fatty acids in membranes - K. W. J. Wahle, Rowett, Scotland.

4.2 ICOSANOID SYNTHESIS - Chairman: P. Ramwell

4.2.1 Leukotriene chemistry - the occurence of other oxidation products of polyenoic fatty acids. - B. Samuelsson, Karolinska Institutet, Sweden.

4.2.2 Regulation of the biosynthesis of prostaglandins and leukotrienes - W.E.M. Lands. Illinois, USA.

4.2.3 The interplay between - linoleate with arachidonate, alpha-linolenate and icosapentaenoate in the synthesis of prostaglandins and leukotrienes and in heamostasis. - P.Needleman, University of Iowa, USA.

5.0 PHYSIOLOGY - J. PIKE.

5.0.1 Prostaglandin involvements in platelet aggregation and adhesion - strucutural changes of the platelet surface, induced by prostanoids. - Sinzinger, Path. Anat. Inst. Vienna, Austria.

5.0.2 Contrasting biological activities of the icosanoic fatty acids - (C20:3,w9, C20:3,W6, C20:4,W6, C20:5,W3) in platelet and endothelial function, - M. Lagarde, INSERM, Lyons, France.

5.0.3 Relationsips between chemical structure and biological activity - of prostacyclin and other icosanoids. - P.A. Aristoff, Kalamazoo, USA.

5.0.4 Ion transport, phosphoglycerides and icosanoids - T.R. Rink, Cambridge, UK.

5.1 Nutrition - R.T. Holman.

5.1.1 Food and platelets - 20:3,W9 correlates with aggregability. - S. Renaud, Lyons, Fr

5.1.2 Requirements for the W6 series of essential fatty acids - U. Houtsmuller, Vlaardingen, Holland.

5.1.3 Requirements for the W3 essential fatty acids - alpha-linolenic, icosapentaenoic and docosahexaeanoic acids - N. Zollner, W. Germany.

5.1.4 Assessment of turnover of prostanoids & leukotrienes - their metabolites and the significance for EFA rquirements. - J.C. Frolich, Stuttgart, Germany.

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6.0 DAY 2 TUESDAY 26TH MARCH.

6.1 DEVELOPMENTAL BIOLOGY Chairman H. Sprecher.

6.1.1 The placental management of essential fatty acids - their compartmentalisation into lipid pools and selective transfer of arachidonic acid and other long chain EFA derivatives for fetal development - D. Kuhn, Philladelphia, USA.

6.1.2 Essential fatty acid considerations of infancy - the premature neonate and the specific requirement for preformed PG precursors in the infant - S. Friedman, Houston, USA.

6.1.3 The endothelial layer interaction with platelets and lymphocytes - during the early development of atherosclerosis. J. Glomsett, USA.

6.2 CARDIOVASCULAR DISEASE Chairman H. Sinclair

6.2.1 The epidemiology of coronary heart disease - with special reference to the W6 and W3 essential fatty acids. - Pyrola, Helsinki, Finland.

6.2.2 Reduction of coronary heart disease risk - a comparison of alternative dietary recommendations. - B. Lewis, London, UK.

6.2.3 The role of fatty acids in thrombosis - A.Nordoy, Norway.

6.2.4 Platelet function, vascular reactivity & blood viscosity in the Japanese. - T.Terano, Japan.

6.3 THE HORMONAL BACKGROUND Chairman - R.R. Brenner.

6.3.1 Diabetes: epidemiological and clinical studies on optimal nutrition - J. Mann. Oxford, England.

6.3.2 The place of dietary fatty acids and their icosanoids - in the regulation of vascular tension. - C.T. Dollery, London, England.

6.3.3 The mechanism of insulin release - Pace-Asciak, Toronto, Canada.

6.3.4 The role of nutrition in the regulation of lipid transport - M. Katan, Wageningen, Holland.

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7.0 DAY 3 WEDENSDAY 27TH MARCH

7.1 DIETARY FATS AND CANCER - Chairman: K. Carrol

7.1.1 The nutritional epidemiology of cancer - with special reference to dietary fats. - P. Newburne, MIT, USA.

7.1.2 PGA induced inhibition of vaccinia virus replication - M.G Santoro, New York, USA.

7.1.3 Does the tissue culture and animal model studies relate to human diet - and cancer? - R. Karmali. New Brunswick N.J., USA.

7.1.4 Tumour invasion and icosanoids - treatment with cyclo-oxygenase inhibitors. - A. Bennet. London, England.

7.2 THE IMMUNE RESPONSE - Chairman: I. Bonta

7.2.1 Leukotriene synthesis by lymphocytes - their participation in cellular infiltration, the immune response and the repair process. - K.F. Austen, USA.

7.2.2 Regulatory activity of the arachidonic acid metabolites on the cell - mediated immune reaction and its relevance to auto-immune disease. - J. Mertin London, UK.

7.2.3 Diet related prostaglandin receptors in macrophages - S. Moncada, UK.

7.2.4 Fatty acids & icosanoids in organ transplantaion - M. Fogh, Washington, USA.

7.3 INFLAMMATION AND TISSUE INJURY Chairman F. Austen.

7.3.1 The role of the 1, 2 and 3 series prostaglandins - in the modulation of the inflammatory reaction. - B. Zurier, Connecticut, USA.

7.3.2 Cyclosporin and the synthesis of icosanoids - by human peritomeal macrophages, P. Ramwell, Washington, USA.

7.3.3 Ischaemia, the liberation of free fatty acids - subsequent icosanoid production and the distortion of the prostacyclin/thromboxane balance. - C. Galli, Milan, Italy.

7.3.4 Human rhuematoid arthritis - essential fatty acids, prostanoids and cyclo-oxygenase inhibitors - Briggs, Beckenham, UK.

8.0 "HOT STUFF AND TORRID TOPICS" - CHAIRMEN W. LANDS & M. CRAWFORD.

This session will consist of six, ten minute presentations of material which has not been previously presented and which is in the opinion of the editorial board represents a major, new advance or is sufficiently controversial for it to merit special attention. Ten minutes or more at the discretion of the Chairman would be allowed for discussion.

The short papers will be selected from amongst the submitted contributions and a short-list will be drawn up prior to the meeting. However, a final decision on the selection will not be made until the evenning of the first day of the conference and papers for consideration can be submitted at any time up until 6.30pm on Monday the 25th March. The decision will be made known on the following morning. titles for this session will not be anounced until this session.

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9.0 POSTER SUBJECT MATTERS:

9.1 Organisation of the posters.

Posters on related topics wil be grouped together so as to form discussion groups. Poster discussion seesions will take place at mid-day so as to allow for discussion groups around the specific topics. The posters wilkl also be manned at seperate times so that those cponcerned in the discussion groups have the possibility of talking to contributors on other subjects.

9.2 BIOCHEMIUSTRY OF ESSENTIAL FATTY ACIDS

Desaturation.
Chain elongation.
Activation.
Incorporation into different lipid pools (phosphoglycerides & neutral lipids).
Competitive effects of different fatty acids.
Trans isomers.
Energy and oxidation: differential rates of oxidation for the different fatty acids.
Cell structures.

9.3 PROSTAGLANDIN & LEUKOTRIENES

Precursors: linoleic, gamma-linolenic, dihomogamma-linolenic and arachidonic acids.
Regulation of PG and LT synthesis.
Thromboxanes and prostacyclins.
New hydroxy products of the polyenoic acids.
C20:3,n-9, C20:3,n-6, C20:4,n-6, C20:5,n-3 in competition for cyclooxygenase and lipoxygenase.
The use of inhibitors.
Metabolites.

9.4 METHODOLOGY

Fatty acids - analytical data and techniques - a) in tissue and plasma lipids; b) in foods - cis/trans isomers (natural plant products, meat, fish).
Icosanoids: a) PGs; b) LTs: c) other hydroxides d) urinary and fecal metabolites. TLC, HPLC, mass-spectroscopy.
Computer applications: a data-base for nutritional studies.
Software developments for analytical-data processing links.
Computer graphics for molecular and receptor models.

9.5 PHYSIOLOGY

Thrombosis and platelet function.
Immune system and leukocyte activity.
Cardiovascular system: heart muscle and endothelial cells.
Renal transport systems.
Ion transport ionophores and glycerides.
Muscle protein synthesis.
Hormone secretion.
Central and peripheral nervous suytem.
Reproductive system: a) fertilisation b) parturition.
Cell differentiation and multiplication.

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9.6 Nutrition

Requirements for essential fatty acids in a) pregnancy b) lactation c) infancy d) adolescence e) the prevention of CHD f) the elderly.
Special lipid requirements of the premature infant.
The ageing process - desaturation and efficiency of utilisation.
Differential activities of linoleic and gamma-linolenic acids.
The fish oil fatty acids.
Effects saturated and W9 fatty acids.
The special role of oleic acid.
Specific requirements for linoleic and other W6 essential fatty acids.
Eicosapenataenoic, docosahexaenoic and other W3 fatty acids.
Assessment of turnover
Trace elements.
The role of specific vitamins.
Alcohol.
Comparative studies - EFA and evolution.
Maternal and fetal nutrition and the outcome of pregnancy - the question of nutrition and low-birth weight.
Human milk: a) composition in relation to diet; b) influence of oral contraceptives; c) comparison of EFA status with artificial milks.
Intravenous alimentation.

9.7 APPLICATIONS TO DISEASE

Toxaemia in pregnancy.
Epidemiology - including Japan, Greece and Greenland.
The Coronary Prevention Group: primary prevention of cardio-vascular disease.
Hypertension and vascular reactivity.
Atherosclerosis.
Lipoproteins and blood lipids.
Multiple sclerosis a) dietary essential fatty acids and intervention; b) the acute relapse; c) the use of hyperbaric oxygen.
Inflammation and rhuematoid arthritis - actions of non-steroidal anti-inflammatory agents.
Psoriasis and leukotrienes.
Cystic fibrosis: a) EFA status; b) supplementation.
Cancer: a) intervention; b) icosanoid production by tumour cells; c) compositional data on tumour phosphoglycerides d) effects of icosanoids on DNA or RNA; e) interactions with the immune system.

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10.0 CONFERENCE DINNER IN HONOUR OF DR. H. SINCLAIR'S 75TH BIRTHDAY

"A historical view of the developments in Essential fatty acids and their prostaglandins." H.M.Sincliar.

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11.0 REGISTRATION:

Registration will commence from 10.30 am. on Sunday 24th March 1985.

12.0 OPENNING OF THE CONFERENCE: 24TH MARCH.

Arrangements will be made for hanging the posters from 3.30 to 5.30 pm. on the 24th. The openning ceremony will be e held in the afternoon of the 24th at 6.00 pm. with a welcoming address being given by Dr. Ralph Holman after which will follow the lecture by Sir John Vane. There wull then be a reception.

13.0 SOCIAL ARRANGEMENTS

Details of the social arrangements Covent Garden, Royal Festival Hall, the pubs or the Theatre offered on the Tuesday evenning will be circulated later.

14.0 CONFERENCE DINNER

The conference dinner will be held on the Wedensday night.

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